What is claimed is:

1. An endovascular filter, comprising:

an elongate tubular member having a proximal end, a distal end, and a first proximal port proximal the distal end of the elongate tubular member;

a first flexible member having a proximal end that passes through the first proximal port of the elongate tubular member, and having a distal end fixed to the elongate tubular member at a first point distal the first proximal port, the first point being located at a circumferential position approximately 180° from the first proximal port;

a filter disposed about the first flexible member,

wherein the first flexible member is expanded by advancing distally the proximal end of the first flexible member.

2. The filter of claim 1, wherein the elongate tubular member has a second proximal port proximal the distal end of the elongate tubular member and located at a circumferential position approximately 180° from the first proximal port, and wherein the endovascular filter further comprises a second flexible member having a proximal end that passes through the second proximal port of the elongate tubular member, and having a distal end fixed to the elongate tubular member at a second point distal the second proximal port, the second point being located at a circumferential position approximately 180° from the second proximal port.

3. The filter of claim 2, further comprising an elongate member slideably disposed relative to the elongate tubular member, wherein the proximal ends of the first and second flexible members are fixed to the elongate member.

4. The filter of claim 1, wherein the filter comprises a mesh.

5. The filter of claim 3, wherein the first and second flexible members are expanded by sliding the elongate member distally.

6. The filter of claim 1, further comprising a capture sheath slideably disposed about the mesh.

7. The filter of claim 3, wherein the elongate member is disposed within a lumen of the elongate tubular member.

8. The filter of claim 1, wherein the filter is bonded at an edge to the first flexible member.

9. The filter of claim 1, wherein the filter comprises a thin film having laser cut holes.

10. The filter of claim 1, wherein the first flexible member passes through a first distal port and is attached within a lumen of the elongate tubular member,

and wherein the first distal port is located at a circumferential position approximately 180° from the first proximal port.

11. A method for performing an endoluminal procedure, comprising the steps of:

providing an endovascular filter comprising an elongate tubular member having a proximal end, a distal end, a first proximal port proximal the distal end of the elongate tubular member, and a first flexible member having a proximal end that passes through the first proximal port of the elongate tubular member, and having a distal end fixed to the elongate tubular member at a first point distal the first proximal port, the first point being located at a circumferential position approximately 180° from the first proximal port, the first flexible member having a filter disposed thereon;

inserting the endovascular filter into a patient's vessel;

advancing the filter to a region of interest; and

advancing distally the first flexible member to expand the filter.

12. The method of claim 11, wherein the vessel is an artery.

13. The method of claim 12, wherein the artery is the aorta.

14. The method of claim 12, wherein the artery is the coronary artery.

15. The method of claim 12, wherein the artery is the carotid artery.

16. The method of claim 11, wherein the elongate tubular member has a second proximal port proximal the distal end of the elongate tubular member and located at a circumferential position approximately 180° from the first proximal port, and wherein the endovascular filter further comprises a second flexible member having a proximal end that passes through the second proximal port of the elongate tubular member, and having a distal end fixed to the elongate tubular member at a second point distal the second proximal port, the second point being located at a circumferential position approximately 180° from the second proximal port..

17. The method of claim 11, wherein the filter comprises a mesh.

18. The method of claim 16, wherein the endovascular filter further comprises an elongate member slideably disposed relative to the elongate tubular member, wherein the proximal ends of the first and second flexible members are fixed to the elongate member.

19. The method of claim 18, wherein the first and second flexible members are operated by sliding the elongate member distally.

20. The method of claim 11, further comprising a capture sheath slideably disposed about the mesh.

21. The method of claim 18, wherein the elongate member is disposed within a lumen of the elongate tubular member.

22. The method of claim 11, wherein the filter is bonded at an edge to the first flexible member.

23. The method of claim 11, wherein the elongate tubular member further comprises an atraumatic tip at a distal end.

24. The method of claim 11, further comprising the step of performing angioplasty.

25. The method of claim 11, further comprising the step of performing stent deployment.

26. An endovascular filter, comprising:

an elongate tubular member having a proximal end, a distal end, and a lumen therebetween, the lumen communicating with a port at the distal end; and

a flexible loop disposed within the lumen of the elongate tubular member and having a first end, a second end, and an intermediate section positioned near the port of the elongate tubular member, the loop having a filter disposed about the intermediate section,

wherein the first end of the flexible loop is operated to advance the loop distally, the intermediate section of the loop extends through the port and into a lumen of a vessel, and the filter is thereby deployed.

27. The filter of claim 26, further comprising a tether attached at one end to the intermediate section of the flexible loop, wherein the tether restrains the intermediate section of the loop and changes the orientation of a plane described by the loop.

28. The filter of claim 26, wherein the filter comprises a mesh.

29. The filter of claim 26, wherein the filter comprises a thin filter having laser cut holes.

30. The filter of claim 26, wherein the flexible loop is a wire.

31. The filter of claim 26, wherein the tether is a wire.

32. The filter of claim 26, wherein the elongate tubular member is a guidewire.

33. A method for performing an endoluminal procedure, comprising the steps of:

providing an endovascular filter comprising an elongate tubular member having a proximal end, a distal end, and a lumen communicating with a distal port, the elongate tubular member having a flexible loop disposed within the lumen of the elongate tubular member and having a first end, a second end, and an intermediate section having a filter disposed thereon;

inserting the endovascular filter into a patient's vessel;

positioning the filter at a region of interest; and

advancing distally the first end of the loop so that the intermediate section of the loop extends from the port of the elongate tubular member, and the filter covers the lumen of the vessel.

34. The method of claim 33, wherein the endovascular filter further comprises a tether attached at one end to the intermediate section of the flexible loop, wherein the tether restrains the intermediate section of the loop and changes the orientation of a plane described by the loop.

35. The method of claim 33, wherein the filter comprises a mesh.

36. The method of claim 33, wherein the filter comprises a thin film having laser cut holes.

37. The method of claim 33, wherein the flexible loop is a wire.

38. The method of claim 33, wherein the tether is a wire.

39. The method of claim 33, wherein the elongate tubular member is a guidewire.

40. The method of claim 35, wherein the endovascular filter further comprises a capture sheath slideably disposed about the mesh.

41. The method of claim 33, further comprising the step of performing angioplasty.

42. The method of claim 33, further comprising the step of performing stent deployment.

43. An endovascular filter, comprising:

an elongate member having a proximal end and a distal end;

a capture sheath slideably disposed about the elongate member;

a plurality of tethers, each tether coupled at a first end to the distal end of the elongate member;

a circular rim coupled to each of said plurality of tethers at a second end of each of said tethers;

an independently moveable tether coupled at a first end to the circular rim; and

a filter disposed about the circular rim.

44. The filter of claim 43, wherein the independently moveable tether is operatively associated with the distal end of the elongate member.

45. The filter of claim 43, wherein the filter comprises a mesh.

46. The filter of claim 43, wherein the filter comprises a thin film with laser cut holes.

47. The filter of claim 43, wherein each of said plurality of tethers comprises a wire.

48. The filter of claim 43, wherein the circular rim comprises a superelastic material.

49. The filter of claim 48, wherein the superelastic material is nitinol.

50. The filter of claim 43, wherein, during use, the independently moveable tether is withdrawn proximally to rotate the circular rim into alignment with the elongate member.

51. The filter of claim 50, wherein the circular rim is rotates into alignment with the capture sheath.

52. The filter of claim 43, wherein the plurality of tethers comprises two tethers.

53. The filter of claim 43, wherein the elongate member is a guidewire.

54. A method for performing an endoluminal procedure, comprising the steps of:

providing an endovascular filter comprising an elongate member, a capture sheath slideably disposed about the elongate member, a plurality of tethers, each tether coupled at a first end to a distal end of the elongate member, a circular rim coupled to each of said plurality of tethers at a second end of each of said tethers, an independently moveable tether coupled at a first and to the circular rim, and a filter disposed about the circular rim;

inserting the endovascular filter into a patient's vessel;

positioning the distal end of the elongate member within a region of interest;

withdrawing a capture sheath to release the circular rim and filter within the region of interest;

withdrawing the independently moveable tether to rotate the circular rim into alignment with the elongate member; and

advancing the capture sheath distally to cover the circular rim and filter.

55. The method of claim 54, wherein the vessel is an artery.

56. The method of claim 55, wherein the artery is the aorta.

57. The method of claim 55, wherein the artery is the coronary artery.

58. The method of claim 55, wherein the artery is the carotid artery.

59. The method of claim 54, wherein the independently moveable tether rotates the circular rim so that a plane defined by the circular rim is parallel to a line defined by the elongate member.

60. The method of claim 59, wherein the line defined by the elongate member lies in the plane defined by the circular rim.

61. The method of claim 54, wherein the independently moveable tether is operatively associated with the distal end of the elongate member.

62. The method of claim 54, wherein the filter comprises a mesh.

63. The method of claim 54, wherein the filter comprises a thin film with laser cut holes.

64. The method of claim 54, wherein each of said plurality of tethers comprises a wire.

65. The method of claim 54, wherein the circular rim comprises a superelastic material.

66. The method of claim 65, wherein the superelastic material is nitinol.

67. The method of claim 54, wherein the plurality of tethers comprises two tethers.

68. The method of claim 54, wherein the elongate member is a guidewire.

69. The method of claim 54, further comprising the step of performing angioplasty.

70. The method of claim 54, further comprising the step of performing stent deployment.

71. A method for performing an endoluminal procedure, comprising the steps of:

providing an endovascular filter comprising an elongate member having a plurality of flexible struts coupled to a distal end, each of said plurality of flexible struts coupled at an opposite end to a filter, and a capture sheath slideably disposed about the elongate member and filter;

advancing the filter to a region of interest within a patient's vessel;

withdrawing the capture sheath to release the filter, wherein the filter expands within the region of interest;

rotating the elongate member, wherein the plurality of flexible struts rotate to contract the filter; and

advancing the capture sheath distally to cover the plurality of flexible struts and the filter.

72. The method of claim 71, wherein the vessel is an artery.

73. The method of claim 72, wherein the artery is the aorta.

74. The method of claim 72, wherein the artery is the coronary artery.

75. The method of claim 72, wherein the artery is the carotid artery.

76. The method of claim 71, wherein the endovascular filter further comprises a circular rim, and wherein the plurality of flexible struts are coupled at the opposite end to the circular rim.

77. The method of claim 71, further comprising the step of performing an endoluminal procedure while the filter is expanded within the vessel.

78. The method of claim 77, wherein the endoluminal procedure comprises balloon angioplasty.

79. The method of claim 77, wherein the endoluminal procedure comprises stent deployment.

80. The method of claim 77, wherein the endoluminal procedure comprises atherectomy.

81. The method of claim 77, wherein the endoluminal procedure includes the step of advancing a catheter over the elongate member.

82. The method of claim 71, wherein the elongate member is a guidewire.

83. The method of claim 71, wherein the plurality of flexible struts are wires.

84. The filter of claim 2, wherein the first flexible member passes through a first distal port and is attached within a lumen of the elongate tubular member, and wherein the first distal port is located at a circumferential position approximately 180° from the first proximal port, and wherein the second flexible member passes through a second distal port and is attached within a lumen of the elongate tubular member, and wherein the second distal port is located at a circumferential position approximately 180° from the second proximal port.

85. The method of claim 11, wherein the first flexible member passes through a first distal port and is attached within a lumen of the elongate tubular member, and wherein the first distal port is located at a circumferential position approximately 180° from the first proximal port.

86. The method of claim 16, wherein the first flexible member passes through a first distal port and is attached within a lumen of the elongate tubular member, and wherein the first distal port is located at a circumferential position approximately 180° from the first proximal port, and wherein the second flexible member passes through a second distal port and is attached within a lumen of the elongate tubular member, and wherein the second distal port is located at a circumferential position approximately 180° from the second proximal port.